

Amendments to the Claims

Listing of Claims:

1. (currently amended) A method for controlling long seeking operation in an optical disc
5 drive, the optical disc drive comprising a sled actuator, a pickup head installed on
the sled actuator for accessing data on an optical disc, and a controller for
controlling the sled actuator to move together with the pickup head, the method
comprising:

- 10 (a) receiving remaining tracks information indicating a number of tracks remained
to be crossed by the sled actuator and/or the pickup head;
- (b) receiving velocity information indicating a velocity of the sled actuator and/or
the pickup head;
- (c) receiving acceleration information indicating an acceleration of the sled
actuator and/or the pickup head; and
- 15 (d) driving the sled actuator to move according to the remaining tracks
information, the velocity information, and the acceleration information;
wherein in step (d), the controller outputs a driving voltage to control a movement
of the sled actuator and/or the pickup head; the driving voltage is a function of the
velocity and the acceleration of the sled actuator and/or the pickup head; and the
20 driving voltage is influenced by a product of the velocity of the sled actuator
and/or the pickup head and a first multiplier.

2 – 3 (cancelled)

- 25 4. (currently amended) The method of claim [[3]] 1 wherein the first multiplier is a
variable determined by the number of tracks remained to be crossed and the velocity of
the sled actuator and/or the pickup head.

5. (currently amended) The method of claim [[3]] 1 further comprising:

(e) decreasing the first multiplier with the controller when the number of tracks remained to be crossed decreases.

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6. (currently amended) The method of claim [[3]] 1 further comprising:

(f) decreasing the first multiplier with the controller when the velocity of the sled actuator and/or the pickup head increases.

10 7. (currently amended) The method of claim 2 A method for controlling long seeking operation in an optical disc drive, the optical disc drive comprising a sled actuator, a pickup head installed on the sled actuator for accessing data on an optical disc, and a controller for controlling the sled actuator to move together with the pickup head, the method comprising:

15 (a) receiving remaining tracks information indicating a number of tracks remained to be crossed by the sled actuator and/or the pickup head;

(b) receiving velocity information indicating a velocity of the sled actuator and/or the pickup head;

(c) receiving acceleration information indicating an acceleration of the sled actuator and/or the pickup head; and

20 (d) driving the sled actuator to move according to the remaining tracks information, the velocity information, and the acceleration information;

25 wherein in step (d), the controller outputs a driving voltage to control a movement of the sled actuator and/or the pickup head; the driving voltage is a function of the velocity and the acceleration of the sled actuator and/or the pickup head; and the driving voltage is influenced by a product of the acceleration of the sled actuator and/or the pickup head and a second multiplier.

8. (original) The method of claim 7 wherein the second multiplier is a variable determined by the number of tracks remained to be crossed and the velocity of the sled actuator and/or the pickup head.

5 9. (original) The method of claim 7 further comprising:

(g) increasing the second multiplier by the controller when the number of tracks remained to be crossed decreases.

10. (original) The method of claim 7 further comprising:

10 (h) decreasing the second multiplier by the controller when the velocity of the sled actuator and/or the pickup head increases.

11 (cancelled)

15 12. (currently amended) A long seeking control system in an optical disc drive, the optical disc drive comprising a sled actuator, a pickup head installed on the sled actuator for accessing data on an optical disc, and a controller for controlling the movement of the sled actuator together with the pickup head, the long seeking control system comprising:

20 a track sensor coupled to the controller for providing remaining tracks information indicating a number of tracks remained to be crossed by the sled actuator and/or the pickup head;

a velocity sensor coupled to the controller for providing velocity information indicating a velocity of the sled actuator and/or the pickup head; and

25 an acceleration sensor coupled to the controller for providing acceleration information indicating an acceleration of the sled actuator and/or the pickup head;

wherein the controller controls a movement of the sled actuator and/or the pickup

head according to the remaining tracks information, the velocity information, and the acceleration information; the controller outputs a driving voltage to control the movement of the sled actuator and/or the pickup head; the driving voltage is a function of the velocity and the acceleration of the sled actuator and/or the pickup head; the driving voltage is influenced by a product of the velocity of the sled actuator and/or the pickup head and a first multiplier, and the first multiplier is a variable determined by the number of tracks remained to be crossed and the velocity of the sled actuator and/or the pickup head.

5 10 13 – 14 (cancelled)

15. (currently amended) The system of claim [[14]] 12 wherein the controller decreases the first multiplier when the number of tracks remained to be crossed decreases.

15 16. (currently amended) The system of claim [[14]] 12 wherein the controller decreases the first multiplier when the velocity of the sled actuator and/or the pickup head increases.

17. (currently amended) The system of claim 13 A long seeking control system in an
20 optical disc drive, the optical disc drive comprising a sled actuator, a pickup head
installed on the sled actuator for accessing data on an optical disc, and a controller
for controlling the movement of the sled actuator together with the pickup head, the
long seeking control system comprising:

25 a track sensor coupled to the controller for providing remaining tracks information
indicating a number of tracks remained to be crossed by the sled actuator and/or
the pickup head;

a velocity sensor coupled to the controller for providing velocity information
indicating a velocity of the sled actuator and/or the pickup head; and

an acceleration sensor coupled to the controller for providing acceleration information indicating an acceleration of the sled actuator and/or the pickup head;

5 wherein the controller controls a movement of the sled actuator and/or the pickup head according to the remaining tracks information, the velocity information, and the acceleration information; the controller outputs a driving voltage to control the movement of the sled actuator and/or the pickup head; the driving voltage is a function of the velocity and the acceleration of the sled actuator and/or the pickup head; the driving voltage is influenced by a product of the acceleration of the sled actuator and/or the pickup head a second multiplier, and the second multiplier is a variable determined by the number of tracks remained to be crossed and the velocity 10 of the sled actuator and/or the pickup head.

18. (original) The system of claim 17 wherein the controller increases the second 15 multiplier when the number of tracks remained to be crossed decreases.

19. (original) The system of claim 17 wherein the controller decreases the second multiplier when the velocity of the sled actuator and/or the pickup head increases.

20 20 (cancelled)